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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

Federal-State Joint Board on Universal)
Service)

CC Docket No. 96-45

COMMENTS OF NORTHERN TELECOM, INC.

Northern Telecom Inc. ("Nortel") hereby comments on the *Recommended Decision* of the Federal-State Joint Board that proposes rules and policies to restructure the existing federal universal service support system.^{1/} Nortel strongly supports the Joint Board's recommendation to add "competitive neutrality" as a universal service principle, particularly to the extent that the definition includes the concept of "technological neutrality." Adhering to the goal of technological neutrality will enable the Federal Communications Commission ("FCC" or "Commission") to ensure that its universal service rules do not thwart the development or deployment of any telecommunications technology, particularly wireless technologies. Similarly, the FCC should endeavor to design its rules to allow *all* telecommunications carriers to take advantage of new wireless technologies to serve universal

^{1/} Federal-State Joint Board on Universal Service, *Recommended Decision*, CC Docket No. 96-45, FCC 96J-3 (released November 8, 1996) ("*Recommended Decision*"); *see also* "Common Carrier Bureau Seeks Comment On Universal Service Recommended Decision", *Public Notice*, CC Docket No. 96-45, DA 96-1891 (released November 18, 1996) ("*Request for Comments*").

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service needs. Nortel also believes that, to the extent that universal service technical standards are necessary, they should be established on a nationwide basis by industry standard-setting organizations, rather than permitting each state to develop its own standards by adopting inconsistent service requirements.

Nortel is keenly interested in universal service and its impact on the telecommunications network.^{2/} It is the leading global supplier, in more than 100 countries, of digital telecommunications systems to businesses, universities, local, state and federal governments, the telecommunications industry, and other institutions. The company employs more than 23,000 people in the United States in manufacturing plants, research and development centers, and in marketing, sales and service offices across the country. Nortel appreciates the increased value of the telecommunications infrastructure when everyone has access to a robust network.

I. The Principle of Technological Neutrality Is Of Critical Importance

Nortel strongly supports the Joint Board's recommendation that the proposed establishment of a new "competitive neutrality" principle for universal service include the concept of "technological neutrality."^{3/} As the Joint Board suggested, the FCC should avoid defining any particular service or technology that must be supported by universal service

^{2/} See, e.g., Reply Comments of Northern Telecom, CC Docket No. 96-45 (filed May 7, 1996).

^{3/} See *Recommended Decision* at para. 23; see also *Request for Comments* at 1 (asking "How should the additional principle of competitive neutrality be defined within the context of universal service?").

support mechanisms, but instead allow the marketplace to direct the development and growth of technology.^{4/} Nortel believes that by preventing universal service from being biased toward any particular technology, the FCC can better ensure that the definition and role of universal service is allowed to evolve as telecommunications technology evolves and to do so in an innovative and cost-efficient manner.^{5/}

Although telecommunications services traditionally have been defined from a wireline perspective, the Commission should ensure that the definitions of services supported by universal service funding also reflect the impact of new technologies. In particular, Nortel urges the FCC to recognize that there are now numerous wireless alternatives to the traditional wireline delivery of telephone service, including commercial mobile radio service, fixed wireless local loop services, local multipoint distribution service, and satellite services. In light of advances in technology and under certain circumstances, these services may be less costly to deploy than wireline technologies. After an initial investment in wireless base stations or satellites, the incremental cost of adding a subscriber will be relatively small. Thus, some wireless technologies may be well suited for ensuring access to advanced telecommunications services in high cost and rural applications. Applying a universal service principle of technological neutrality may facilitate opportunities to take advantage of these economies where they are appropriate.

As the Joint Board implicitly acknowledges throughout the *Recommended Decision*, wireless technologies offer promising vehicles for carriers to meet universal service goals in

^{4/} *Recommended Decision* at para. 23.

^{5/} *Id.*

a flexible and economical manner.^{6/} Indeed, Nortel previously has demonstrated that fixed wireless access ("FWA") service^{7/} will allow the prompt and inexpensive deployment of new and/or improved service to areas where service is not now provided and can do so at a quality equivalent to wireline offerings in urban areas.^{8/} Moreover, wireless technologies may enhance the ability of carriers to meet the universal service goals of expanded affordable service to schools, libraries, and healthcare facilities. For example, to the extent that the Commission adopts the proposed NII/SUPERNet service designed to allow schools to develop wireless local area networks connecting the classrooms, FWA service (along with wireless broadband technologies in the 28 GHz and 38 GHz bands) can provide a fast and robust connection between the schools and the telecommunications infrastructure.^{9/} Such technologies likewise are capable of providing economical high capacity links for libraries and hospitals that will help advance the universal service goals advocated by Congress, the Joint Board, and the Commission.^{10/}

^{6/} See, e.g., *id.* at paras. 53, 66.

^{7/} FWA is a wireless point-to-multipoint service that will be used by telecommunications carriers as a "wireline equivalent" supplemental or alternative to traditional "local loop" technologies. Although Nortel refers to FWA as a "service" in accordance with Commission convention, Nortel does not expect FWA to be offered as a separate or distinct service, but rather as a technology that can support multiple services.

^{8/} See, e.g., Comments of Nortel on the Petition for Rulemaking, RM-8837 (filed August 12, 1996) at 15, 24-25 ("FWA Comments").

^{9/} *Id.* at 22.

^{10/} See, e.g., 47 U.S.C. § 254(b)(6). Given these benefits, Nortel strongly reiterates its request that the Commission proceed expeditiously with proposed spectrum allocations and rules for these wireless technologies so that these services can be deployed in support of universal service and other beneficial uses. In particular, Nortel believes that the public

(continued...)

Although the Joint Board has espoused technological neutrality as a critical component of its recommended competitive neutrality principle, the *Recommended Decision* appears to have not fully recognized the beneficial impact that the development and deployment of wireless technologies can have on universal service. For example, the Joint Board's discussion of benchmark costing models generally fails to acknowledge that wireless technologies often can provide an economically reasonable substitute for, or complement to, wireline loops. In addition, in the only model that included this assumption -- Benchmark Costing Model Version 2 -- it is not clear that the cost of deploying wireless loops was accurately represented.^{11/} Indeed, recent evidence illustrates a trend toward rapidly declining local loop costs made possible by the deployment of wireless loop technology such as FWA systems.^{12/} The cost effective manner in which wireless technologies can be

^{10/}(...continued)

interest would be well served by an allocation of spectrum for an FWA service. In addition to its ability to meet universal service needs in a rapid and economical manner, such an allocation will enable new and existing carriers to provide: (i) a rapidly deployable, cost-competitive alternative facilities-based source of wireline service; (ii) new and/or improved service in areas where service is not now provided at a quality equivalent to wireline offerings in urban areas; and (iii) seamless interconnectivity with existing fixed network infrastructures. FWA Comments at 18-23. Moreover, service providers and carriers in more than fifty countries are embracing this technology and supporting allocation of spectrum for its use. Nortel urges the Commission to show leadership in making appropriate spectrum available for FWA to benefit universal service objectives and American consumers at large. Nortel has made its recommendations on appropriate spectrum for FWA service. *Id.* at 9-10, 26-31; *see also* Comments of Nortel in WT Docket No. 96-6 (filed March 25, 1996). We are ready and eager to work with industry and the Commission to complete the process.

^{11/} *See Recommended Decision* at para. 250 (assuming loop costs to be "less than \$10,000"); *see also* Comments of Nortel in RM-8837 at 20.

^{12/} *See, e.g.* "Technology of Fixed Wireless Access" by David Trinkwon at 7, "The Economics of Wireless Local Loop" by Bruce Egan at Table 5.2, and "Using Wireless
(continued...)

provided illustrates the benefits of adopting a technologically neutral universal service principle.

As an essential corollary of technological neutrality, Nortel also suggests that the Commission allow *all* telecommunications service providers to take advantage of wireless solutions to serve universal service needs. The FCC should ensure that its universal service rules contain no artificial restriction against allowing incumbent carriers, as well as new entrants, to take advantage of the economies made possible by wireless technologies to meet their universal service and other service needs.

II. Nationwide Service Standards Are Essential

And finally, Nortel reiterates its position^{12/} that it is unnecessary for government regulators to prescribe specific service standards for universal service, whether in the context of adopting and enforcing service quality rules^{14/} or otherwise. Instead, industry standard-setting organizations are better able to establish any necessary service standards. The FCC frequently has acknowledged that such organizations possess the requisite technical expertise

^{12/}(...continued)

Technology to Provide Basic Telephone Service in the Developing World" by Alex Hills and Hung-Yao Yeh at Figure 3 all presented at the Columbia Institute for Tele-Information, Columbia University Graduate School of Business conference on The Role of Wireless Communications in Delivering Universal Service on October 30, 1996.

^{13/} See, e.g. *Recommended Decision* at para. 100 (summarizing Nortel's belief that it is unnecessary for the FCC to prescribe specific technical standards to ensure quality telecommunications services).

^{14/} *Id.* at para. 104 (declaring that states may adopt and enforce service quality rules).

and resources to craft beneficial service uniformity on a nationwide basis.^{15/} As it has done in the past, the FCC should reiterate its commitment to allow marketplace considerations to drive the process where practical and to avoid intrusive regulations and should recognize that the industry, rather than federal or state regulators, is best suited to craft service standards based on marketplace and innovative considerations.^{16/} Allowing individual states to mandate a potential myriad of customized service standards that would force the redesign of networks and the related conformance of telecommunications equipment would impose significant added costs on manufacturers, carriers, and ultimately consumers with no corresponding benefits. The FCC's role in the service standard arena should be limited to ensuring that state input results in a convergent, rather than divergent, process.

* * *

In sum, Nortel believes that by taking the steps recommended herein, the Commission will further the goals of universal service and access to advanced telecommunications services by schools, hospitals and subscribers throughout the United States. Nortel believes

^{15/} See, e.g., Filing and Review of Open Network Architecture Plans, *Memorandum Opinion and Order*, 4 FCC Rcd. 1 (1988) at para. 50 (stating that many technical considerations can best be addressed by industry experts with the resources and incentives to resolve them).

^{16/} *Id.*

that such policies will well serve the public interest and meet Congress' intent in adopting
Section 254 of the Communications Act.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Stephen L. Goodman", written over a horizontal line.

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